

prosecution towards issuance. Withdrawal of the non-statutory obviousness-type double patenting rejection is respectfully requested.

2. The Examiner Has Failed To Establish A Prima Facie Case of Obviousness In Combining The Dent, Kumar et al., And Fenter Patents To Reject Independent Claims 1, 19 And 29

In numbered paragraph 2, page 4 of the final Office Action, the Examiner rejects claims 1, 2, 11, 12, 19, 25, 26, 29, 36, 37, 40, 76-83, 86-88, 90-94 and 97-102 under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,619,503 to Dent ("Dent") in view of the Kumar et al. patent and further in view of the Fenter patent. In numbered paragraph 3, page 6 of the final Office Action, the Examiner rejects claim 89 under 35 U.S.C. 103(a) as being unpatentable over the Dent patent in view of the Kumar et al. patent and the Fenter patent and further in view of US Patent 5,911,117 to Bhame et al. ("Bhame et al."). These rejections are respectfully traversed.

As Applicants have disclosed of record, a power output means 106 supplies an output to a first 90° hybrid 134, such 90° hybrids being arranged in tandem to permit the use of a plurality of separate, parallel stages, or channels, of amplification (e.g., page 8, lines 7 and 8; Fig. 1). Applicants have further disclosed that outputs of a voltage regulator chip 212 include a drive output 222 and an additional output of the voltage regulator (page 10, lines 12-15); and that if the voltage at node 248 rises above a predetermined threshold, current will not flow from the voltage input 202 to the node 248 (page 11, lines 18-20).

The foregoing features are broadly encompassed by claim 1, which recites an apparatus for full duplex wireless communication of information, including, among

other features, means for performing at least one of modulating and demodulating information signals, the modulated information signal being boosted in power using a plurality of 90° hybrids arranged in tandem to output a plurality of amplification channels; means for information transmission/reception, said information transmission/reception means providing for information transmission using a first polarization and for information reception using a second polarization to thereby isolate information transmission from information reception in full duplex communication; regulator means having at least one DC voltage regulator for providing at least two DC output voltages; and means for inhibiting a first of said two DC voltage outputs when a second of said two DC voltage outputs is above a predetermined threshold. Claims 19 and 29 recite similar features.

On page 5 of the final Office Action, the Examiner admits "Dent does not disclose regulating power, or for that matter any manner concerning power consumption." Further, the Dent patent relates to using dual polarization to increase the number of signals they can send in the bandwidth they have. The Dent patent discloses ***transmitting two signals each having different polarizations*** so they can transmit twice the signals at the same frequency. This is polarization for transmission of two signals, and does not relate to the receiving of signals.

In contrast, Applicants have disclosed transmitting one signal with one polarization and receiving a receive signal with a different polarization. As Applicants have claimed, the isolation provided by the polarization affords separation of the transmit signal from the receive signal of the co-located receiver. The Dent patent would not have taught or suggested information transmission/reception means providing for information transmission using a first polarization and for

information reception using a second polarization to thereby isolate information transmission from information reception in full duplex communication, as recited in claim 1. Claim 19 similarly recites, isolating transmission/reception of information by transmitting information with a first polarization and by receiving information with a second polarization in full duplex communication. Claim 29 similarly recites a dual polarization antenna for transmitting said information with a first polarization, and for receiving information with a second polarization opposite to said first polarization in full duplex communication.

Further, the Dent patent discloses a frequency multiplexer to combine at transmit and split the two signals apart at receive, since the two signals are at different frequencies. In contrast, Applicants' claimed features result in a lot less bandwidth and the device for combining the two polarizations, e.g., an ortho-mode transducer is comparatively very wide in bandwidth and expensive.

Although the Examiner does not seem to address the hybrid arrangement for polarized transmission as Applicants have claimed, even if the Examiner's assertions are considered, the cited passage in the Fenter patent does not speak of Applicants' claimed "at least one DC voltage regulator for providing at least two DC output voltages," and is completely silent as to "inhibiting a first of said two DC voltage outputs when a second of said two DC voltage outputs is above a predetermined threshold." Rather the relevant passage in the Fenter patent (col. 2, line 1-16) merely appears to disclose that "It is a further object of this invention to provide a switching regulator power supply which minimizes power consumption and maximizes energy transfer notwithstanding changes in input line voltage."

windings. In contrast, Applicants have claimed inhibiting a first of two DC voltage outputs when a second of two DC voltage outputs is above a predetermined threshold. The Fenter disclosure does not relate to this claimed feature. The Fenter disclosure does not teach inhibiting the voltages supplied to its circuits from exceeding critical values, while in operation.

Applicants' disclosure clearly support the claimed features. The linear circuits Applicants disclosed for DC power conditioning circuits, such as the high current regulator 200, as exemplified in Fig. 2, do provide for both lower and upper limits of voltage. The power dissipated in the regulation circuit is minimized by the use of the control transistor Q2, Fig. 2. In addition to controlling the voltage to a high degree, the monolithic circuits in Applicants' disclosed apparatus are protected from damaging high currents by ensuring that no currents flow into the devices unless the negative gate control voltages are correct.

At least for these reasons, the Fenter patent relates to providing two regulated voltages derived from AC, but would not have taught or suggested regulator means having at least one DC voltage regulator for providing at least two DC output voltages; and means for inhibiting a first of said two DC voltage outputs when a second of said two DC voltage outputs is above a predetermined threshold, as recited in claim 1. Claims 19 and 29 recite similar features.

The Kumar et al. patent and Bhame et al. patent do not cure the deficiencies of the Dent patent and the Fenter patent. The Kumar et al. patent was applied by the Examiner in the December 14, 2006 Office Action for its disclosure of a solid state transmitter providing two stages of amplification; and the Bhame et al. patent was applied by the Examiner for its disclosure of a "cabinet 33" for RF equipment, as

The Fenter patent teaches an apparatus for converting AC voltages to DC voltages, particularly for switching regulator power supplies (col. 1, lines 8-12). The apparatus uses a triggered switching technique, based on voltages exceeding a threshold level, to vary the width of a pulse that is proportional to the AC line voltage, so that variations in the AC input to the regulator are compensated for with energy either provided to or gotten from a storage capacitor. This provides a "steady" source of power to a constant load, reducing output voltage variations due to variations in the AC input. The regulator also senses the changes in the output load and uses a frequency converter to alter the rate at which the variable width pulses are generated. This allows minimizing the power delivered to the transformer's secondary, which also minimized the power consumption of the power supply. The disclosure in the Fenter patent relies on the detection of variations in the AC as well as load variations. However, the Fenter patent does not relate to, and would not have taught or suggested at least one DC voltage regulator for providing at least two DC output voltages, as variously recited in claims 1, 19 and 29.

The Fenter disclosure relates to detecting the difference in AC voltages to provide the variable pulse widths needed to control the output voltages. In contrast, Applicants' regulator has a DC input, which is distinct from the Fenter disclosure of AC voltages. Fenter disclosure, even if applied to Applicants' full-duplex wireless communication, the levels of regulation provided by the Fenter patent is inadequate for the communication of information as encompassed by Applicants' claims 1, 19 and 29.

Further, the Fenter disclosure of circuit does not allow the output of the +5 V to go very far above +5 V. It does this by interrupting the pulses to the primary

best gathered from the disclosure and Fig. 3, but these respectively applied references would not have taught or suggested the above recited features of claim 1, and as similarly recited in claims 19 and 29.

CONCLUSION

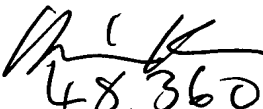

For the foregoing reasons, all of Applicants' pending claims are allowable. A reversal of the final rejection, and allowance of the present application, are therefore requested.

Respectfully submitted,

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Attachment: Terminal Disclaimer

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